Universal Tensile Testing Machine
RC-101A

Main Functions:

1. Primarily applicable to testing of metallic and non-metallic materials, such as rubber, plastics, wires and cables, fiber optic cables, safety belts, seat belts, leather belts, composite materials, plastic profiles, waterproof membranes, steel pipes, copper materials, profiles, spring steel, bearing steel, stainless steel (and other high-hardness steels), castings, steel plates, steel strips, and non-ferrous metal wires, performing tensile, compression, bending, shearing, peeling, tearing, and two-point extension tests (extensometer required separately).

2. This machine adopts an electromechanical integrated design, mainly composed of a force sensor, transmitter, microprocessor, load drive mechanism, computer, and color inkjet printer. It features a wide and accurate loading speed and force measurement range, high precision and sensitivity in load and displacement measurement and control, and can also perform automatic control tests for constant velocity loading and constant velocity displacement. The floor-standing model's design and paint finish fully consider modern industrial design and ergonomic principles.

3. Main Features: Displacement measurement is performed using an imported photoelectric encoder. The controller employs an embedded single-chip microcomputer structure with built-in powerful measurement and control software,

integrating measurement, control, calculation, and storage functions. It also features automatic calculation of stress and elongation (extensometer required).
It needs to be equipped with an extensometer, tensile strength, and elastic modulus functions, and automatically calculates the results; automatically records the force value or elongation at the maximum point, breaking point, and specified point; uses a computer to dynamically display the test process and test curves, and performs data processing. After the test, the curves can be magnified through the graphics processing module for data re-analysis and editing, and reports can be printed. The product performance reaches the international advanced level.

4. Control Software Introduction (Software Operating System Language: Simplified Chinese/English)

Force Units: N, KN, Kgf, Lbf; Length Units: mm, cm, in (can be freely converted)

Automatic Zeroing: Upon receiving the test start command, the measurement system automatically zeros.

Display Method: Data and curves are dynamically displayed during the test.

Result Reproduction: Test results can be accessed arbitrarily, and data curves can be re-analyzed.

Result Comparison: Multiple test characteristic curves can be overlaid, reproduced, magnified, and presented for analysis and comparison of a set of samples using different colors.

Emergency Stop: Equipped with an emergency stop switch to cut off the power supply to the entire machine in an emergency.

5. Control Methods:

Multiple control modes are available, including setting speed, load fracture (breakage), and running time via computer software.
Automatic detection of material fracture and crushing occurs, and automatic shutdown is implemented. Automatic return can be set.

Curve Types:
Load-displacement, Load-time, Displacement-time.
Stress-strain, Strain-time, Stress-time.
The x and y axes of the curves can be arbitrarily set.

Available test data includes: maximum force, minimum force, breaking strength, upper and lower yield strength, tensile strength, compressive strength, elastic modulus, elongation, maximum, minimum, and average values of the peel range, etc. It features multiple protections against overload, overcurrent, overvoltage, undervoltage, overspeed, and stroke.

For quotes and more information
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The data results are exported from the currently accepted national standard Crystal Report format.

Technical Parameters:

Maximum Load: 5000kg (5T)
Accuracy Class: 0.5
Effective Force Measurement Range: 0.4%～100% (0.5 class)
Force Measurement Accuracy: Within ±0.5% of the indicated value
Testing Machine Resolution: 1/200000 of the maximum load, no range distinction, and constant resolution throughout the entire range
Basic Load Sensor Configuration: One tension/compression sensor (maximum load)
Extended Configuration: Multiple sensors can be added
Effective Test Width: 400mm (can be widened according to customer requirements)
Effective Tensile Space: 800mm (can be heightened according to customer requirements)
Test Speed Range: 0.01～250mm/min
Displacement Measurement Accuracy: Within ±0.5% of the indicated value
Deformation Measurement Accuracy: Within ±0.5% of the indicated value (Large or small deformation options available upon request)
Test bench safety devices: Electronic limit protection
Test bench lifting device: Automatic control with both fast and slow speeds, jogging capability
Test bench return function: Manual or automatic selection; automatically or manually returns to the initial test position at maximum speed after the test
Overload protection: Automatic protection if the load exceeds the maximum load by 10%
Fixed fixture configuration: One set of tensile clamps (or one set depending on the product's testing requirements)
Main unit dimensions: 900*600*2000mm (L*W*H)
Power system: Servo motor + high-precision ball screw
Power supply: 380V/50HZ
Power: 2KW (different power motors are available as standard depending on the force requirements)
Main unit weight: Approx. 500 Kg

- Standard clamps generally include the following types: compression clamps, tensile clamps, textile testing clamps, tape peeling clamps, three-point bending clamps, four-point bending clamps, wire winding clamps, bolt cutters, and flat clamps.

- Custom-made clamps are also available based on product characteristics. Tensile testing machine models can also be customized to your needs or recommended.

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